

Biomedical Functional Imaging and Quantification

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Recent advances in information technology and digital medical imaging have revolutionized biotechnology, biomedical research and healthcare. Functional imaging is a new technology that provides images of physiological and biochemical functions at the molecular level, and provides the opportunity to accurately quantify a variety of physiological and biochemical events such as Local Cerebral Blood Flow, Metabolic Rate of Glucose, Protein synthesis Rate and drug uptake, including neural receptor specific and non-specific binding, that will prove indispensable in the application of the molecular approach to disease states, clinical diagnosis, treatment and assessment the response to the treatment. This talk will focus on some core theories and enabling techniques research in nuclear medicine molecular imaging, biomedical systems modeling and biomedical process quantification. Several clinical cases will be presented.